

Mumbai University

Question Paper



NETWORK SECURITY

B.Sc.IT: Semester – V

April – 2015

Time: 2 ½ Hours**Total Marks:** 75**N.B.:** (1) All Question are Compulsory.

(2) Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.

(3) Answer To The Same Question Must Be Written Together.

(4) Number To The Right Indicates Marks.

(5) Draw Neat Labeled Diagrams Wherever Necessary.

(6) Use of Non – Programmable Calculator is allowed.

Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain Vernam Cipher with example. (5)
- (B) List and explain types of Criminal Attacks. (5)
- (C) Why there is need for Security? Explain Security Models. (5)
- (D) Explain IP Spoofing and IP Sniffing in detail. (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain Double and Triple DES. (5)
- (B) Explain ECB and CFB Algorithm Modes in detail. (5)
- (C) Explain details of One Round in IDEA. (5)
- (D) Write a note on Blowfish. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain in detail how Symmetric and Asymmetric Key Cryptography can be combined. (5)
- (B) State and explain with example steps involved with RSA Algorithm. (5)
- (C) How Hash-Based Message Authentication works? (5)
- (D) Explain problems with Public Key Exchange. (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) List and explain the content of a Digital Certificate. (5)
- (B) List and explain fields of a CRL. (5)
- (C) Explain Password Based Encryption Standard in detail. (5)
- (D) Write a note on Blom's Scheme. (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain how Security is implemented in GSM. (5)
- (B) Draw and explain Authentication Header Format. (5)
- (C) Distinguish between SSL and SET. (5)
- (D) Write a note on VPN. (5)

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain how Kerberos works. (5)
- (B) Explain how Time Based Tokens works? (5)
- (C) Write a note on Certificate Based Authentication. (5)
- (D) Explain One Way Authentication for carrying out the Handshake. (5)

[TURN OVER]

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

- (A) Explain Diffie Hellman Key exchange Algorithm with example. (5)
 - (B) Explain processes in each Round of AES. (5)
 - (C) Write a note RSA and Digital Signature. (5)
 - (D) Explain Station to Station Protocol. (5)
 - (E) Explain PGP Operations. (5)
 - (F) Write a note on Single Sign On Approaches. (5)
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ASP.NET WITH C#

B.Sc.IT: Semester – V
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Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Why Exception Handling is required? Write syntax for user define Exception? (5)
- (B) Explain Inheritance and Polymorphism. (5)
- (C) Short note on Framework Base Class Library. (5)
- (D) What is Type Casting? Explain the concept of Boxing and Unboxing. (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain <LINK> tag with example. (5)
- (B) What is Garbage Collector? How it works? (5)
- (C) What is CSS? Give its advantages and disadvantages. (5)
- (D) What is Delegate? Explain the steps to implement Delegate in C#.NET. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain CheckBox and RadioButton web server controls in ASP.NET. (5)
- (B) Explain the different parts that constitute ASP.NET application. (5)
- (C) What is the difference between Button and LinkButton Web Server Controls? (5)
- (D) Write a code that shows how to write a "LOCAL" cookie to a client's computer. The "LOCAL" cookie, (5)
stores
- *FirstName*
 - *LastName*

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain CustomValidator control with suitable example. (5)
- (B) What is the relationship between master page and content page? (5)
- (C) Explain UriEncode() and UriDecode() methods in ASP.NET. (5)
- (D) Create a web page to read student's seat number, name add contact number using text boxes. Use (5)
appropriate validation controls to validate the following:
Student roll number should be from 1 to 120, name is compulsory and contact number must be of 10
digits. Write HTML and code behind code

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is DataReader? Explain ExecuteReader, ExecuteNonQuery methods. (5)
- (B) Explain command object in ADO.NET. (5)
- (C) Name, Address, ContactNo, City in SQL Server. Write code to display get all record from database into (5)
GridView control.
- (D) Explain Windows Authentication in ASP.NET. (5)

[TURN OVER]

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is AJAX? Explain UpdatePanel Control with example. (5)
- (B) What is the use of Document Ready Function? (5)
- (C) Explain JQuery expression with example. (5)
- (D) Create a web page to declare and initialize array of 10 integers and display the numbers greater than 30 using LINQ. Code should execute on button's click event in a web page. (5)

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

- (A) What is Post-Back Event? Explain IsPostBack with suitable example. (5)
 - (B) Write a code to achieve overriding using virtual method. Use comments whenever necessary. (5)
 - (C) Explain the Provider Model of ASP .NET. (5)
 - (D) Write short note on jQuery event functions. (5)
 - (E) Differentiate between Dataset and DataReader. (5)
 - (F) What are different ways to integrate a CSS into a Web Page? (5)
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SOFTWARE TESTING

B.Sc.IT: Semester – V
April – 2015

Time: 2 ½ Hours**Total Marks:** 75**N.B.:** (1) All Question are Compulsory.

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Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Define and Compare the terms Test Policy and Test Strategy. (5)
- (B) What are the causes of Software Defects? (5)
- (C) Describe Test analysis and Design activities. (5)
- (D) Explain the Test implementation and execution process. (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) State and explain the characteristics of non-functional testing. (5)
- (B) Write a note on Regression Testing. (5)
- (C) Explain Alpha and Beta Testing with reference to acceptance Testing. (5)
- (D) What is impact analysis with reference to Maintenance Testing? (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) List and explain the phases of formal review. (5)
- (B) Describe the roles and responsibilities of Moderator, Scribe and Manager in review process. (5)
- (C) Compare Static and Dynamic Testing. (5)
- (D) Explain Inspection as a formal review technique. (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is decision table? Describe decision table testing technique. (5)
- (B) State and explain the factors considered for choosing Test techniques. (5)
- (C) What is white box testing technique? Write a note on statement coverage testing. (5)
- (D) Do the Equivalence Partitioning and Boundary value Analysis and design test cases for testing the program that reads an arbitrary number of temperatures (as integer numbers) within the range -60°C ... +60°C and prints their mean value. (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What are the skills that are needed for the test staff? (5)
- (B) What are the purposes of Test Monitoring? (5)
- (C) Define the terms Priority and Severity with reference to incident management. (5)
- (D) What is a Test Plan? State and explain any four components of a Test Plan. (5)

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) State and explain characteristics of Requirements Management Tools. (5)
- (B) Explain Dynamic analysis tools used for Performance Monitoring. (5)
- (C) State and explain Risk factors associated with use of the Testing Tools. (5)
- (D) What are the potential benefits of using tools to support testing? (5)

[TURN OVER]

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

- (A) Explain any two Testing principles. (5)
 - (B) With the help of diagram explain the V Model of testing. (5)
 - (C) Explain the goals of Technical Review. (5)
 - (D) Write a note on State Transition Testing technique with suitable example. (5)
 - (E) Write a note on Risk based Testing. (5)
 - (F) Explain any one tool used for Static Testing. (5)
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ADVANCED JAVA

B.Sc.IT: Semester – V

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Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the Border Layout used in java with the help of a program. (5)
- (B) Explain the Delegation Event Model in Event Handling. (5)
- (C) What are Adapter Classes? Why are they used? (5)
- (D) Write a Java program to handle the Mouse related events. (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Write a java program using JCheckBox and JRadioButton to get the following output. Once, the items are chosen and place order button is clicked, the items selected should be displayed in the command line. (5)



- (B) Write a program to demonstrate usage of JTree in Java Swings. (5)
- (C) What are Swings in Java? Differentiate between Swings and AWT. (5)
- (D) Write a java program to create different tabs using JTabbedPane. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the steps involved in a services Lifecycle with help of a diagram. (5)
- (B) Why do we need the ServletContext interface in java? (5)
- (C) Explain the Web Application Directory Structure. (5)
- (D) What are HttpServletRequest and HttpServletResponse? (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is statement in JDBC? Explain the various kinds of statements that can be created in JDBC. (5)
- (B) What is the difference between a traditional JSP Page and a JSP Document? Quote an example. (5)
- (C) Explain any 5 Implicit Objects used in JSP. (5)
- (D) Explain the <jsp:include> element used in JSP. (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What are EJBs? Explain its benefits. (5)
- (B) What is Java Server Faces? State its components. (5)
- (C) What is the concept of MVC Architecture? (5)
- (D) Explain the JSF Process Flow. (5)

[TURN OVER]

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What are actions in Struts? Explain with examples. (5)
- (B) What is Hibernate? Explain its Architecture. (5)
- (C) Explain Interceptors in Struts. (5)
- (D) Explain the Application Flow in MVC with respect to Struts. (5)

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

- (A) Explain the concept of Inner Classes and Anonymous Inner Classes used in Event Handling. (5)
 - (B) Explain the use of Editor Panes in Java Swings. (5)
 - (C) Explain the ServletConfig Interface in Java. (5)
 - (D) How can you add a bean to a JSP Page? (5)
 - (E) Give an example of a configuration file in JSF. (5)
 - (F) Explain the steps to create a Hibernate Application. (5)
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LINUX

ADMINISTRATION

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Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the duty of Linux System Administrator in Monitoring and Tuning Performance. (5)
- (B) What are different Linux Distributions? Explain any three in brief. (5)
- (C) Explain the stages of Linux Boot Process. (5)
- (D) Explain the Linux Directory Structure. (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) State and explain any five files that deal with System Environmental Settings. (5)
- (B) What are the network files to be changed when we setup or move the system? Explain each in brief. (5)
- (C) What is DHCP Server? How is it configured? How is DHCP Client configured? (5)
- (D) What is Network File System? What are the features of NFS4? What are advantages and disadvantages of NFS? (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) How are Samba Users created? Explain. (5)
- (B) What is Server Message Block Protocol? Explain smbclient and smbmount Commands. (5)
- (C) What are the tasks to be performed to setup Timeserver? Explain the steps to configure NTP Server and NTP Client. (5)
- (D) What is Caching Proxy Server? What are the steps in configuring squid? Explain A Caching Proxy. (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Write a short note on SSH. (5)
- (B) How is Xinetd Server Configured? Explain. (5)
- (C) What is BIND? Explain the files required to configure BIND server. (5)
- (D) Explain Zone Files and Reverse Zone Files. (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) State and explain the components required for Email Delivery Process. (5)
- (B) Explain SMTP, POP3 and IMAP4 Protocols. (5)
- (C) What is vsftpd? What are its features? Explain its configuration files. (5)
- (D) How can anonymous uploads and guest user accounts be enabled vsftpd? Explain. (5)

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the working and features of Apache Web Server. (5)
- (B) How is Virtual Server Configured? Explain Virtual Server Configuration Directives. (5)
- (C) What are the advantages of Shadow Passwords over Traditional Password System? (5)
- (D) Explain the command to Binary Packages be built from source rpm Packages with different Valid Build Stages. (5)

[TURN OVER]

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

- (A) Compare GRUB and LILO Boot Loaders. (5)
 - (B) An ISP is granted a block of addresses starting with 190.100.0.0/16 (65,536 addresses). (5)
 - (C) Explain the different sections of smb.conf file. (5)
 - (D) What is scp? Explain with examples. (5)
 - (E) What are the features of Postfix Mail Server? Explain its primary configuration file. (5)
 - (F) What is sudo? What are its features? How does succession work after the creation of configuration file? (5)
-